UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,171	01/19/2006	Mori Nagayama	040302-0540	7246

22428 7590 08/11/2008

FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
WANG, EUGENIA	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
08/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,171	NAGAYAMA ET AL.	
	Examiner	Art Unit	
	EUGENIA WANG	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-14,16-18 and 31-43* is/are pending in the application.

4a) Of the above claim(s) *14,16-18 and 31-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 April 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received June 3, 2008:

a. Claims 2, 15, and 19-30 have been cancelled as per Applicant's request. Claims 1, 3-14, 16-18, and 31-43 are pending with claims 14, 16-18, and 31-43 being withdrawn as to unelected inventions.

b. The previous objection to the drawing has been withdrawn in light of the amendment.

c. The previous rejection of record is maintained with any changes as necessitated by the amendment.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 3, 2008 has been entered.

Election/Restrictions

3. Newly amended claim 14 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: It now includes the subject matter of previously withdrawn claim 15, which defined Group II, Species A of the originally filed Election/Restriction requirement dated April 17, 2007, which is

incorporated herein. As stated in the original Election/Restriction requirement, Group II, Species A's method has a different special technical feature than that of the elected Group I (Group I's special technical feature being the composition with the density gradient and Group II, Species A's special technical feature being the method for changing the quantity of solid for an active material slurry and then coating a collector with the slurry to gain a density gradient) and lacks criticality due to the X references listed in the International Search report.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 14, as currently amended to include limitations of a previously withdrawn claim, is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Furthermore, it is noted that the election of Group I and the withdrawal of Groups II and III in Applicant's response to the restriction requirement (dated May 16, 2007) was done so without traverse, as no errors were distinctly and specifically pointed out with the original restriction requirement (MPEP §818.03(a)). Therefore, the withdrawal of newly amended claim 14 by original presentation is seen as proper.

Information Disclosure Statement

4. Examiner submits that KR 2001-0072835 has been considered. It was considered on the submission of the Information Disclosure Statement dated May 9, 2008. The considered Information Disclosure Statement was filed with Advisory Action dated May 23, 2008.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-7, 9, 11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0858120 (Yoshida et al.).

As to claims 1 and 4, Yoshida et al. teach a secondary battery and a method of making that secondary battery (title). In embodiment 5, Yoshida et al. teach that has a final product where the polymer, and the electrolyte, accordingly, in the electrode showed a density gradient in such a manner that its concentration is not strong towards the current collector, but heavier towards the other side (p7, lines 34-38). Consequently, the active material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$, graphite powder, polystyrene powder as can be seen from p. 7, lines 17-33). Furthermore, Yoshida et al. teach a nonaqueous electrolytic solution, which is applied to collectors to form positive and negative electrodes (abs). Furthermore, it is taught that the active material of the electrodes are placed on current collectors (p7, lines 17-25). Again, it is emphasized that the end product is an electrode where the polymer, and the electrolyte, accordingly, in the electrode showed a density gradient in such a manner that its concentration is not strong towards the current collector, but heavier towards the other side (p7, lines 34-38). Consequently, the active

material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$ (active material), graphite powder (conductive material), polystyrene powder (binder), and a solvent as can be seen from p. 7, lines 17-33) (as applied to claims 1 and 4). (All of the additions to the active material mixture are solids, except for the non-active solvent (as applied to claims 1 and 4).)

As to claim 5, Yoshida et al. teach that the active material mixture preferably comprises a binder resin, an organic solvent, an electrically conducting particulate material incorporated with the active material (p4, lines 41-44).

As to claims 6 and 13, Yoshida et al. teach that the electrode material applied to both the positive and negative electrode current collector is about 100 μm, which encompasses the upper limit of the claim of the instant application (p7, lines 17-25).

As to claim 7, Yoshida et al. teach a nonaqueous electrolytic solution, which is applied to collectors to form positive and negative electrodes, where the electrolytic solution is injected into the electrodes containing active material (abs). As previously mentioned, the end product is an electrode where the polymer, and the electrolyte, accordingly, are in the electrode in such a manner that the concentration of the polymer and electrolyte are not strong towards the current collector, but heavier towards the other side (p7, lines 34-38). Consequently, the active material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$, graphite powder, polystyrene powder as can be seen from p. 7, lines 17-33). Therefore, there is inherently a

concentration gradient of electrolyte salt towards the collector, since there is less electrolyte and thus electrolyte salt towards the current collector (with the space being taken up by the active material mixture) than away from the current collector.

As to claim 9, Yoshida et al. teach a nonaqueous electrolytic solution, which is applied to collectors to form positive and negative electrodes, where the electrolytic solution is injected into the electrodes containing active material (gel electrolyte) (abs). Furthermore, Yoshida et al. teach a lithium secondary battery, wherein the end product is an electrode where the polymer, and the electrolyte, accordingly, are in the electrode in such a manner that the concentration of the polymer and electrolyte are not strong towards the current collector, but heavier towards the other side (title; p7, lines 34-38). Consequently, the active material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$, graphite powder, polystyrene powder as can be seen from p. 7, lines 17-33). Therefore, a concentration gradient of polymer through the thickness of the active material mixture layer and the collector exists, as it was previously stated that the polymer concentration is not strong towards the collector and is stronger on the side opposite the current collector (p7, lines 34-38). (The polymer is taken to be the film forming material.)

As to claim 11, Yoshida et al. teach a nonaqueous electrolytic solution, which is applied to collectors to form positive and negative electrodes, where the electrolytic solution is injected into the electrodes containing active material (gel electrolyte) (abs). Furthermore, Yoshida et al. teach a lithium secondary battery, wherein the end product

is an electrode where the polymer, and the electrolyte, accordingly, are in the electrode in such a manner that the concentration of the polymer and electrolyte are not strong towards the current collector, but heavier towards the other side (title; p7, lines 34-38). Consequently, the active material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$, graphite powder, polystyrene powder as can be seen from p. 7, lines 17-33). Therefore, there is inherently a concentration gradient of electrolyte salt towards the collector, since there is less electrolyte and thus electrolyte salt towards the current collector (with the space being taken up by the active material mixture) than away from the current collector. Furthermore, a concentration gradient of polymer through the thickness of the active material mixture layer and the collector exists, as it was previously stated that the polymer concentration is not strong towards the collector and is stronger on the side opposite the current collector (p7, lines 34-38). (The polymer is taken to be the film forming material.)

Response to Arguments

6. Applicant's arguments filed April 3, 2008 have been fully considered but they are not persuasive.

Applicant. argues that Examiner did not address Applicant's arguments address in the response to arguments.

Examiner respectfully disagrees, and points to the response to the Response to Arguments (section 6), wherein Examiner sets forth that "The claim language only says that a gradient within the active material layer is needed. Therefore since there is a

gradient in the polymer, the active material layer has a gradient. Furthermore, Applicant has not shown that the other materials (i.e. the active material itself) in the electrode are not in a gradient. Since there is a gradient of polymer, it would be expected that the other materials would arrange itself in a gradient that is inversely proportional to the gradient of the polymer." Thus, Examiner submits that such an argument was addressed in the previous office action.

Applicant argues that Yoshida et al. does not teach the electrode active material layer having a density gradient as claimed, namely that the density gradient is developed with a gradient of a solid concentration increasing along a thickness from the surface of the electrode active material layer towards the collector.

Examiner respectfully disagrees. It was set forth that embodiment 5 of Yoshida et al. teaches a final product where the polymer, and the electrolyte, accordingly, in the electrode showed a density gradient in such a manner that its concentration is not strong towards the current collector, but heavier towards the other side (p7, lines 34-38). Consequently, the active material mixture would occur in an opposite manner, so that the active material would occur in higher concentration (where the active material mixture comprises of $LiCoO_2$, graphite powder, polystyrene powder as can be seen from p. 7, lines 17-33). The basis of the conclusion drawn is within Embodiment 5 itself (see p 7, lines 15-40). Since it is stated that the polymer fills the voids of the electrode (made of the electrode active material – the mixture of $LiCoO_2$, graphite powder, and polystyrene), the gradient of polymer in one direction indicates a gradient of active material in the other direction (as it fills the portion not filled by the polymer).

Accordingly, as set forth within the rejection and reiterated above, it is submitted that the final product of Yoshida et al.'s embodiment 5 includes the same gradient density as the one claimed in claim 1. Applicant has not provided any proof or reasoning as to how the prior art does not read on the claimed invention or as to how Examiner's position is incorrect. Accordingly, the rejection of record is maintained.

Applicant argues that Yoshida et al. only teaches a gradient of polymer material used in a cell, wherein this is different than that of claim 1 (the active material layer has a density gradient).

Examiner respectfully disagrees with Applicant's position. The teaching of the gradient of polymer in one direction corresponds to an opposite gradient of the active material within the active material layer, as set forth within the rejection. The basis of the conclusion drawn is within Embodiment 5 itself (see p 7, lines 15-40). Since it is stated that the polymer fills the voids of the electrode (made of the electrode active material – the mixture of $LiCoO_2$, graphite powder, and polystyrene), the gradient of polymer in one direction indicates a gradient of active material in the other direction (as it fills the portion not filled by the polymer). Accordingly, as set forth within the rejection and reiterated above, it is submitted that the final product of Yoshida et al.'s embodiment 5 includes the same gradient density as claimed in claim 1. Applicant has not provided any proof or reasoning as to how the prior art does not read on the claimed invention or as to how Examiner's position is incorrect. Accordingly, the rejection of record is maintained.

Applicant argues that the distribution of polymer in Yoshida et al. does not constitute a corresponding feature anticipatory of the claimed density gradient.

Examiner respectfully disagrees with Applicant's position. The teaching of the gradient of polymer in one direction corresponds to an opposite gradient of the active material within the active material layer, as set forth within the rejection. The basis of the conclusion drawn is within Embodiment 5 itself (see p 7, lines 15-40). Since it is stated that the polymer fills the voids of the electrode (made of the electrode active material – the mixture of $LiCoO_2$, graphite powder, and polystyrene), the gradient of polymer in one direction indicates a gradient of active material in the other direction (as it fills the portion not filled by the polymer). Accordingly, as set forth within the rejection and reiterated above, it is submitted that the final product of Yoshida et al.'s embodiment 5 includes the same gradient density as claimed in claim 1. Applicant has not provided any proof or reasoning as to how the prior art does not read on the claimed invention or as to how Examiner's position is incorrect. Accordingly, the rejection of record is maintained.

Applicant argues that Yoshida et al. at the most teaches a variation of the ratio of active material.

Examiner respectfully disagrees with Applicant's position. The teaching of the gradient of polymer in one direction corresponds to an opposite gradient of the active material within the active material layer, as set forth within the rejection. The basis of the conclusion drawn is within Embodiment 5 itself (see p 7, lines 15-40). Since it is stated that the polymer fills the voids of the electrode (made of the electrode active

material – the mixture of $LiCoO_2$, graphite powder, and polystyrene), the gradient of polymer in one direction indicates a gradient of active material in the other direction (as it fills the portion not filled by the polymer). Accordingly, as set forth within the rejection and reiterated above, it is submitted that the final product of Yoshida et al.'s embodiment 5 includes the same gradient density as claimed in claim 1 and does teach more than a ratio of active material. Applicant has not provided any proof or reasoning as to how the prior art does not read on the claimed invention or as to how Examiner's position is incorrect. Accordingly, the rejection of record is maintained.

Applicant argues that the macroscopic variation of active material from cell to cell is different than the microscopic density gradient of an active material layer within the same cell.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the specific type of density gradient (macroscopic/microscopic)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Accordingly, Examiner submits that the density gradient as claimed is still anticipated by Yoshida et al., as set forth within the 102 rejections above. Thus the rejection is maintained.

Applicant admits that Yoshida et al. teaches that polymer is introduced to the voids of the cell, and makes the conclusion that Yoshida cannot have a density gradient claimed in claim 1.

Examiner respectfully disagrees with Applicant's conclusion. It is noted that Applicant admits Yoshida et al. teaches that polymer is introduced to the voids of the positive and negative electrode. (Note this is also supported by embodiment 5, p7, lines 15-40). However, Examiner submits that the teaching of the gradient of polymer in one direction (as taught in embodiment 5) corresponds to an opposite gradient of the active material within the active material layer, as set forth within the rejection. The basis of the conclusion drawn is within Embodiment 5 itself (see p 7, lines 15-40). Since it is stated that the polymer fills the voids of the electrode (made of the electrode active material – the mixture of $LiCoO_2$, graphite powder, and polystyrene), the gradient of polymer in one direction indicates a gradient of active material in the other direction (as it fills the portion not filled by the polymer). Accordingly, as set forth within the rejection and reiterated above, it is submitted that the final product of Yoshida et al.'s embodiment 5 includes the same gradient density as claimed in claim 1. Applicant has not provided any proof or reasoning as to how the prior art does not read on the claimed invention or as to how Examiner's position is incorrect. Accordingly, the rejection of record is maintained.

Applicant argues that the difference between Yoshida et al. and claim 1 are more than a design choice, wherein the differences result in an improvement on the prior art.

Examiner submits that it has never been submitted that the density gradient is a "design choice." However, Examiner submits that the claim language of claim 1 does not distinguish the claimed invention from that of Yoshida et al. (as set forth in the 102 rejection and above in the response to arguments thus far). Therefore, it is submitted

that Yoshida et al. and the structure as claimed in claim 1 are the same and would accordingly provide the same improvements. There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Schering Corp. v. Geneva Pharm. Inc., 339 F.3d 1373, 1377, 67. Additionally, it is noted that the teaching of an improvement is relevant in an anticipatory rejection, since the structure is the same.

Applicant (a) states than an example embodying the structure of claim 1 includes printing a plurality of electrode thin layers where the solid concentration in each thin layer is different and increases successively from one layer to the next and (b) argues that the paste-like mixture of Yoshida et al. applied to the current collector cannot form the density gradient as claimed.

Examiner respectfully disagrees with Applicant's position.

With respect to (a): In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the specifics of the structure, such as the thin layers of electrodes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993) (It is noted that the example referred to seems to embody imitations of claims 3, 8, 10, and 12; however, this claim is obviated with the combination of Tanjo et al.)

With respect to (b): Since the assumption in the (a) portion is incorrect, the argument in (b) does not apply. Although Applicant argues that the paste-like mixture of Yoshida et al. is unlike the density gradient claimed, as in example (a), the example of (a) is narrower than that of the claim language. The claim language does not limit the electrode to being multiple thin film layers. Therefore, it is viewed that the structure of Yoshida et al. and that of the claimed invention of the independent claims are the same. As, there is no evidence, proof, or reasoning to the contrary, Examiner upholds the rejection or record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al., as applied to claim 1, 7, 9, and 11, in view of US 2002/0028380 (Tanjo et al.).

The teachings of Yoshida et al. have been previously discussed and are herein incorporated.

As to claims 3, 8, 10, and 12, Yoshida et al. does not specifically teach that the active material mixture layer comprises a plurality of laminated thin film layers different in (a) the solid concentration (active material) (as applied to claim 3), (b) the concentration of the electrolyte salt (as to claim 8), (c) the concentration of film forming material (polymer) (as applied to claim 10), and (d) the concentrations of the electrolyte salt and film forming material along a thickness from the surface of the current collector to the other side of the electrode.

Tanjo et al. teach an active material layer, where the active material layers have different porosities and are layered accordingly (para 0051, lines 1-3; fig. 3). Using multi-layers, power density can be increased without sacrificing energy density (para 0051, lines 6-7). Furthermore, Tanjo et al. teach that energy density is influenced by average porosity and active material amount in the active layer [20] (para 0051, lines

22-27). *And* power density can be effectively increased by balancing the diffusion in the positive active material [10] and the migration in the electrolytic solution [50] (para 0051, lines 18-22). Therefore, the motivation of making separate layers for gradients (be it of the porosity, active material concentration, electrolyte salt concentration, film forming material concentration, or a combination of the electrolyte salt and film forming material concentration) is to control power and energy density. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to create separate layers for the gradient in Yoshida et al.'s teaching in order to more effectively promote power and energy density.

Response to Arguments

8. Applicant's arguments filed April 3, 2008 have been fully considered but they are not persuasive.

Applicant first argue that since Yoshida et al. fails to teach claim 1, the combination of Tanjo et al. with Yoshida et al. would also fail to teach claim 1.

Examiner respectfully disagrees. The rejection of Yoshida et al. is maintained with the reasons set forth above (as addressed in Response to Arguments in the previous office action (section 6), as well as The Response to Arguments detailed in section 6 in this office action). At this point Applicant is not arguing the combination, and thus the rejection stands.

Applicant argues that Applicant submits there is insufficient rationale to modify Yoshida et al. and states that it is not addressed by Examiner.

Examiner respectfully disagrees. First Examiner would like to state that, in the previous office action, this statement was in the construct of a hindsight argument. It is noted that in the previous office action, section 8, response to arguments, Examiner sets forth that there is no specific argument/showing made towards the combination and upholds that position. However, Examiner would like to further elaborate on why this argument is not applicable and convincing in order to clarify the position taken. Applicant only makes a conclusory statement that there is insufficient rationale to modify Yoshida et al. with Tanjo et al. However, Examiner submits that proper teaching and rationale exists for the combination and reiterates it herein: "the motivation of making separate layers for gradients (be it of the porosity, active material concentration, electrolyte salt concentration, film forming material concentration, or a combination of the electrolyte salt and film forming material concentration) is to control power and energy density." Due to the teaching (as listed under the 103 rejection) and the rationale in that same section (repeated above for clarity's sake), Examiner submits that proper rationale does exist. Applicant does not provide any proof/reasoning as to why this rationale is either improper or not applicable. Therefore, Applicant's argument is not convincing, as it does not specifically point out how the rationale is insufficient.

Applicant argues that the motivation of combining Tanjo et al. and Yoshida et al. essentially relies on Applicant's disclosure and is thus impermissible hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is noted that nowhere in the rejection is Applicant's own disclosure referred to within the rejection. Tanjo et al. is relied upon, wherein the teaching of Tanjo et al. as well as the rationale for using it are set forth. Therefore, Examiner is uncertain how hindsight is being used.

Applicant argues that Applicants provide a rationale for utilizing the missing elements from Yoshida et al. and that Examiner appears to be using Applicant's own teaching.

Examiner respectfully disagrees. First of all, Examiner would like to set forth that Tanjo et al. is relied upon, wherein the teaching of Tanjo et al. (being relied upon for the general teaching that gradients made using multi-layers controls power and energy density) as well as the rationale for combining are set forth within the 103 rejection. It is unclear how there is use of impermissible hindsight when Applicant's own disclosure is not mentioned, and wherein Tanjo et al. teaches both the missing element and a clear rationale. It is noted that the argument as made above is not directed to the combination of Tanjo et al. and Yoshida et al. Since the arguments are not shown with respect to the combination of Tanjo et al. and Yoshida et al., the rejection made is maintained, as shown in the 103 rejection above.

Applicant argues that there is no analysis as to the use of *In re McLaughlin*.

Examiner would like to submit that the use of *in re McLaughlin* was proper, as only knowledge within the level of ordinary skill at the time the claimed invention was made was used and does not include knowledge gleaned from Applicant's disclosure. This is the case because both Yoshida et al. and Tanjo et al., relied upon predate the effective filing date of the instant application. Additionally, Examiner submits that only Yoshida et al. and Tanjo et al. were relied upon within the rejection, as the Applicant's own disclosure is not mentioned within the rejection. Accordingly, Examiner believes that the use of the prior art of rector, as well as *In re McLaughlin* to be proper.

Applicant argues that the office action does not provide any rationale/assertion that the obviousness arguments do take into account what was within the skill of the ordinary artisan at the time the invention was made was taken into account.

Examiner respectfully disagrees and submits that the prior art of record relied upon for the rejection constitute what was known by one of ordinary skill in the art at the time the invention was made. Furthermore, there is a motivation statement for combining, wherein the resulting product would have been the same as that of the claimed invention. Since the prior art of record predates that of Applicant's instant application and a motivation for combining is disclosed, Examiner is unsure why the combination of Yoshida et al. and Tanjo et al. is not exemplary of what was known by the ordinary artisan at the time the invention was made.

Applicant argues that Examiner's position is that Applicant may never argue impermissible hindsight.

Examiner respectfully disagrees with Applicant's statement. Examiner is merely arguing that the 103 rejection of record only takes into account knowledge which was within the level of ordinary skill at the time the invention was made (the teachings of Tanjo et al. and Yoshida et al. predate that of Applicant's, wherein a motivation to combine was clearly set forth) and does not include knowledge gleaned only from the applicant's disclosure (wherein Examiner notes that the obviousness rationale follows from the teaching of Tanjo et al. and that Applicant's own disclosure is not noted within the rejections). Accordingly, Examiner is merely stating that impermissible hindsight has not been used in this case.

Applicant makes an analogy to criminal law.

Examiner submits that this analogy is not applicable to the case at hand. First of all, criminal law and patent law are distinctly different, and the evidence necessary for both are different as well. Accordingly, they are not comparable. Additionally, the analogy itself is flawed as it is not clear that a death occurred in the analogy presented. However, Examiner would like to note that the specifics in any case (either in criminal or patent proceeds) would have to be examined, wherein in the case of the instant application, Examiner does not believe that that *In re McLaughlin* is improperly used. This is because the 103 rejection of record only takes into account knowledge which was within the level of ordinary skill at the time the invention was made (the teachings of Tanjo et al. and Yoshida et al. predate that of Applicant's, wherein a motivation to combine was clearly set forth) and does not include knowledge gleaned only from the applicant's disclosure (wherein Examiner notes that the obviousness rationale follows

from the teaching of Tanjo et al. and that Applicant's own disclosure is not noted within the rejections).

Applicant argues that the rejection says that it (1) "takes into account only knowledge which was within the level of ordinary skill and (2) "does not include knowledge gleaned from applicant's disclosure" without providing evidence or rationale.

Examiner respectfully disagrees with Applicant's position. First Examiner would like to note that Applicant only makes a statement that there is no evidence or rational that conditions (1) and (2) above exist without providing any reasoning as to how these two conditions do not exist. Therefore it is not seen as convincing that the conditions listed above do not exist. In fact Examiner submits that both conditions (1) and (2) are followed within the rejection. With respect to (1), the rejection takes account knowledge which was within the level of ordinary skill at the time the invention was made, since the teachings of Tanjo et al. and Yoshida et al. predate that of Applicant's, wherein a motivation to combine was clearly set forth. With respect to (2), the rejection does not include knowledge gleaned only from the applicant's disclosure, because the obviousness rationale follows from the teaching of Tanjo et al. combined with Yoshida et al., wherein Applicant's own disclosure is not noted within the rejections and thus is not relied upon. Examiner is uncertain how these conditions are not met and thus upholds the rejection.

Applicant requests rejoinder of the claims 16-18 and 31-43, since (a) they depend on either claims 1 and 14, which are allowable and (b) would not be a burden placed on the PTO.

Examiner respectfully disagrees with Applicant. It is first noted that within this action claim 14 is withdrawn by original presentation. As set forth in the Election/Restriction section, above claim 14 now includes limitations set forth previously by claim 15 (now cancelled, previously withdrawn). Accordingly, since claim 14 now includes limitations not elected originally (Group II, Species A, as set forth in the Election restriction requirement dated April 17, 2007), it is withdrawn. With respect to (a), the rejection of record is maintained for the reasons set forth above. Therefore claim 1 is not allowable. With respect to (b), a burden would be placed on Examiner for examining all of the groups, as set forth in the written Election/Restriction. Furthermore, the Election/Restriction was not traversed, and a traversal at this time would be untimely. For those reasons, Examiner will not rejoin the claims at this time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795